Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

PR 92-257

In the matter of	)	
	)	
Amendment of Parts 2, 90 of the	)	
Commission's Rules To Permit	)	
Increased Use of Frequencies In The	)	RM-
156-162 MHz Bands By Industrial	)	
and Land Transportation Private	)	
Land Mobile Radio Services	)	

To the Commission:

COUNCIL OF INDEPENDENT COMMUNICATION SUPPLIERS
PETITION FOR RULEMAKING

I. INTRODUCTION

The Council of Independent Communication Suppliers ("CICS"), [1/] pursuant to section 1.401 of the Commission's rules, 47 C.F.R. § 1.401, requests amendments to the Commission's rules as described herein to permit increased use of frequencies in the 156-162 MHz band by the Industrial and Land Transportation (hereinafter "I/LT") Private Land Mobile Radio Services. Specifically, CICS requests that the Commission:

1/ CICS is an organization comprised of nearly 100 entities engaged in serving the needs of private radio eligibles, particularly those located in small and rural communities throughout the United States. CICS' membership is open to those who sell or service radio equipment or provide services to private land mobile radio service ("PLMRS") licensees. CICS is a distinct market council of the Special Industrial Radio Service Association, Inc. Amendment of the Commission's rules as requested herein will affect CICS' membership by redefining the permissible uses of the publicly-owned resource that, in a very real sense, defines their marketplace: the electromagnetic spectrum.

- Amend Parts 2 and 90 of the Commission's rules to expand authorized I/LT service operations within the 156-162 MHz band.

- Establish within that band new primary channels that are 12.5 kHz offset from: (1) existing duplex frequency pairs allocated in Section 80.371 for maritime public correspondence; and (2) certain simplex frequencies allocated in Section 80.373 for port operations.

- Adopt operational requirements to ensure that I/LT usage of newly established primary channels will not interfere with usage of frequencies allocated to maritime services. The specific requirements are: (1) geographic separation between maritime and I/LT land stations, and (2) power limitations.

- Designate new primary channels as an I/LT pool to be managed by SIRSA consistent with current 420/800/900 MHz frequency coordination procedures. 2/

II. DISCUSSION

A. Expanding I/LT Usage Opportunities In the 156-162 MHz Band Will Further The Public Interest

The instant petition for rulemaking is based on a simple and well known fact: in many areas of the country, the demand by I/LT eligibles for 150-162 MHz band systems greatly exceeds the supply

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2/ The eligibles for this pool include the Power, Petroleum, Forest Products, Motion Picture, Relay Press, Special Industrial, Manufacturers, Telephone Maintenance, Motor Carrier, Railroad, Taxicab and Automobile Emergency Radio Services. It is the Commission's established practice to group these radio service eligibles into a single I/LT category, and to designate SIRSA to be the coordinator for I/LT-assigned frequency pools. See, e.g., Amendment of Part 90, PR Docket No. 83-737, 51 FR 14993 (Apr. 22, 1986) (800 MHz I/LT pool); Amendment of Part 90, PR Docket No. 86-163, 2 FCC Rcd 825 (1987) (420 MHz I/LT pool); 900 MHz Reserve Band Allocations, Gen. Docket No. 84-1233, 61 RR 2d 165, 187 (1986) (900 MHz I//LT pool).

of spectrum allocated to those eligibles in that band. [3/] In view of this marketplace reality, it has never been more important for the Commission to take actions designed to achieve its long-standing goal of ensuring that the electromagnetic spectrum is allocated in a maximally efficient, "pro-growth" manner. See id., 47 U.S.C. § 151.

The Commission can alleviate some of the congestion on existing I/LT frequencies by establishing new primary channels within the 156-162 MHz band. I/LT eligibles already are authorized to operate on various designated frequencies within that band. See 47 C.F.R. §§ 90.59-90.95. The remaining frequencies are allocated to other services, including maritime services. See, e.g., 47 C.F.R. §§ 80.371(c) (public correspondence frequencies); 80.373(f) (port operations). Although these frequency allocations extend from coast-to-coast, the demand for each allocated frequency is not uniform throughout the nation. This is particularly true with regard to maritime frequencies. The same frequency reserved for port operations in the Boston Harbor area is also set aside for port operations in Lincoln, Nebraska (and other inland areas), where the level of maritime activity is nowhere near as high, if indeed it exists at all. By comparison, I/LT frequencies in inland areas are greatly congested. [4/] An

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3/ See generally "Private Land Mobile Telecommunications Requirements," Final Report of Planning Staff, FCC Private Radio Bureau (August 1983).

4/ The Commission's licensing records demonstrate the high levels of spectrum utilization in the 150 MHz band by I/LT eligibles. For example, a spot-check of licenses granted in

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allocation system that results in this degree of spectrum utilization disparity between maritime and I/LT services does not further the public interest.

The Commission can rectify this situation without reducing maritime users' interference protection or impinging the growth of maritime services. Appendix A to this petition identifies frequencies within the 156-162 MHz band that currently are allocated to the maritime service but are not being utilized at levels even approaching those experienced on existing I/LT frequencies in that band. 5/ Establishing new primary I/LT channels offset 12.5 kHz from existing maritime channels preserves usage opportunities for maritime eligibles and creates new -- and sorely needed -- usage opportunities for I/LT eligibles.

Establishing new primary channels in order to alleviate frequency congestion is consistent with established Commission spectrum management policy in the bands below 470 MHz. Just two years ago the Commission deemed it appropriate to establish new

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inland states to special industrial users -- just one of the 12 groups within the I/LT category -- shows the large numbers of these licensees using 150 MHz spectrum in inland states: Colorado - 862 systems; Nebraska - 1,708 systems; North Dakota - 1,305 systems; Montana - 1,009 systems; Kansas - 1,912 systems.

5/ These targeted maritime frequencies are duplex public correspondence channels listed in Section 80.371 of the Commission's rules, see 47 C.F.R. § 80.371 (channels 24, 84, 25, 85, 26, 86, 27, 87, 28, 88), and simplex private communications channels listed in Section 80.373, see 47 C.F.R. § 80.373 (channels 05, 65, 66, 73, 14, 74, 77, 20). Appendix A also lists the proposed new primary I/LT channels that would be 12.5 kHz offset from maritime frequencies.

primary channels (offset from existing channels) in the 150 MHz band for use by Business Radio eligibles. See Amendment of Part 90, 4 FCC Rcd 5756 (1990). There, as here, the availability of frequency coordination and the lack of congestion on adjacent channels made the creation of primary channels an attractive means of maximizing efficient spectrum utilization. 6/

B. New Primary Channels Will Not Compromise Maritime Safety Operations

CICS' proposal in no way threatens maritime radio operations, especially those related to the public safety or the preservation of life and property. None of the identified maritime frequencies from which new primary I/LT channels would be offset is designated for maritime emergency or distress operations. Rather, all of the frequencies are allocated for standard port operations or maritime public communications. Thus, there is little possibility that operations on the new primary channels will degrade maritime emergency or distress services.

Offsetting new primary channels 12.5 kHz from the targeted maritime frequencies reduces the potential that I/LT usage might

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6/ In that proceeding, new primary channels offset 15 kHz from existing channels were created in the 150 MHz band for use by Business Radio eligibles in Puerto Rico and the Virgin Islands. See Amendment of Part 90, 4 FCC Rcd at 5757-58. The Commission declined to establish similar channels in the continental United States due to concerns about possible service degradation on adjacent bands and the possibility that operations on the new channels might foreclose future narrowband technologies. Id. As demonstrated infra, at Section B and note 6, grant of the instant petition will neither degrade service on adjacent channels nor foreclose future narrowband operations.

interfere with adjacent-frequency maritime usage. [7/] This theoretical interference potential can be eliminated for all practical purposes by establishing appropriate operating requirements. Specifically, private land mobile operations on the new primary channels should be subject to the following restrictions:

- 50-mile separation shall be required between any existing land station in the maritime service and any I/LT land station operating on an adjacent (12.5 kHz offset) frequency.
- I/LT operations shall be subject to a 50-watt output power limitation.
- Frequency coordination shall be required for I/LT applications.

CICS has performed an engineering study to demonstrate that adopting these operating restrictions will ensure that marine station operations experience no interference as a result of I/LT usage of the new primary channels. [8/] The study shows that overlap of the 40 dBu contours of 12.5 kHz offset frequency stations is avoided where station operating parameters are as represented herein: A height above average terrain of 500 feet, 50 watts transmitter power output, a relatively high (9 dBi) gain antenna, and resulting effective radiated power (ERP) of 400 watts. Applying this virtual "worst case" analysis, the 40 dBu

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7/ Each of the proposed primary channels would be 25 kHz wide. Reducing channel bandwidth to 12.5 kHz might create additional interference protection for maritime operations, and CICS does not object to such a reduction. Analog and digital equipment capable of operating on narrowband 12.5 kHz channels should be available in the marketplace by the end of 1992.

8/ A copy of the engineering study is attached to the instant petition at Appendix B.

service contours of both the IL/T and marine base stations would extend a maximum of 24.2 miles, affording adequate protection from interference where the minimum separation required between stations is 50 miles.

Effective implementation of these operational restrictions requires professional frequency coordination. CICS recommends that the Commission allow applications to be coordinated in accordance with procedures presently utilized in the 420/800/900 MHz I/LT pools. Pursuant to those procedures, applications for new primary channels would be coordinated by the Special Industrial Radio Service Association, Inc. ("SIRSA"). SIRSA is the Commission's certified frequency coordinator for the Special Industrial Radio Service and the I/LT 420/800/900 MHz pools. 9/ SIRSA also coordinates channels from the 800 general access pool for those entities: (a) eligible to become I/LT licensees; (b) wishing to expand trunked systems; or (c) consolidating conventional systems into a trunked system. SIRSA coordinates in excess of 6,000 applications per year on behalf of applicants seeking Commission authority to operate radio stations on frequencies allocated to the Special Industrial Radio Service and the previously noted 420/800/900 MHz frequency pools. Thus, SIRSA is well equipped and demonstrably capable of performing the frequency advisory functions needed for effective operations on the new primary channels.

9/ See note 2, supra.

III. CONCLUSION

Creating new primary channels in the 156-162 MHz band for I/LT usage under appropriate operating conditions will relieve frequency congestion currently experienced by I/LT eligibles without impeding in any way existing or potential maritime operations. Therefore, CICS respectfully requests that the Commission grant the instant petition for rulemaking and move immediately to amend its rules in accordance with the foregoing discussion.

Respectfully submitted,

COUNCIL OF INDEPENDENT
COMMUNICATION SUPPLIERS

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APPENDIX A

EXISTING MARITIME CHANNEL ALLOCATIONS

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PROPOSED PRIMARY I/LT CHANNELS POOL

SELECTED EXISTING MARITIME FREQUENCIES IN THE 157-162 MHZ BAND

Public Correspondence Frequencies
(Section 80.371(c))

157.200/161.800 MHz	157.325/161.925 MHz
157.225/161.825 MHz	157.350/161.950 MHz
157.250/161.850 MHz	157.375/161.975 MHz
157.275/161.875 MHz	157.400/162.000 MHz
157.300/161.900 MHz	157.425/162.025 MHz

Private Communications Frequencies
(Section 80.373(f) - Port Operations)

156.250 MHz	156.700 MHz
156.275 MHz	156.725 MHz
156.325 MHz	156.875 MHz
156.600 MHz	157.000 MHz
156.675 MHz	

PROPOSED PRIMARY I/LT CHANNELS POOL
(12.5 kHz Offset)

Duplex Frequency Pairs

157.2125/161.8125 MHz	157.3375/161.9375 MHz
157.2375/161.8375 MHz	157.3625/161.9625 MHz
157.2625/161.8625 MHz	157.3875/161.9875 MHz
157.2875/161.8875 MHz	157.4125/162.0125 MHz
157.3125/161.9125 MHz	157.4375/162.0375 MHz

Simplex Frequencies

156.2625 MHz	156.7125 MHz
156.2875 MHz	156.7375 MHz
156.3375 MHz	156.8875 MHz
156.6125 MHz	157.0125 MHz
156.6875 MHz	

APPENDIX B

ENGINEERING STUDY

spectrum management system (tm)
1270 fairfield road • suite 33 • gettysburg, pennsylvania 17325 • (717) 334-5840 • fax (717) 334-9602
1110 n. glebe road • suite 500 • arlington, virginia 22201 • (703) 528-5115 • fax (703) 524-1074

Petition for Rule Making
Interservice Sharing on Certain Frequencies in the Maritime Services

Engineering Supplement

The attached plot depicts the predicted 40 dBu contours of hypothetical stations in the marine and land mobile services, in the 157 MHz band. The land mobile base station frequency is offset from the marine base station frequency by 12.5 KHz.

The 40 dBu contour has been selected because it represents a defacto standard for service contours in the Private Land Mobile Services. Operations in the marine service are limited to 50 watts transmitter output power. The proposed parameters for the land mobile stations sharing this band also limit the transmitter output power to 50 watts. However, the effective radiated power (ERP) of each base station is also dependent on the gain of the antenna used. This analysis assumes a relatively high gain of 9 dBi. This results in an ERP of approximately 400 watts for the marine and land mobile base stations.

The service contour of each station is determined by applying the ERP and the transmitter height above average terrain (HAAT) to the Commission's R6602 curves to determine the 40 dBu contour range. For the purposes of this analysis, the HAAT used for each station is also relatively high at 500 feet. This value is high because the ground elevation in port cities is generally low. Therefore, this analysis reviews technical parameters that may be considered "worst case".

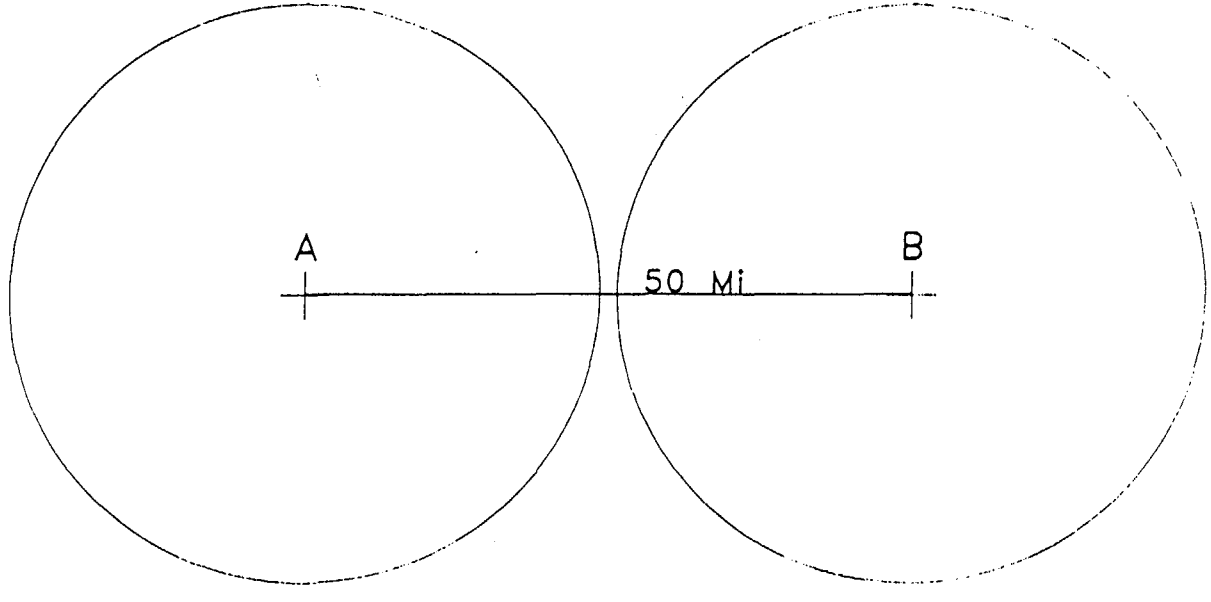
Based on the parameters discussed above, the 40 dBu service contour of the marine and land mobile stations is 24.2 miles. Therefore, a separation of 50 miles appears to be adequate to insure no overlap of the 40 dBu contour. The possibility of harmful interference to the marine station operations will also be reduced by the 12.5 KHz carrier frequency offset of the land mobile station.

RED: 40 dbu (50/50)

Propagation Model: R6602

Site A
Land Mobile Station
12.5 KHz Offset
HAAT: 500 Ft
TX Power: 50 Watts
Antenna Gain: 9 dbd
ERP: 400 Watts
40 dbu: 24.2 Mi

Site B
Marine Station
HAAT: 500 Ft
TX Power: 50 Watts
Antenna Gain: 9 dbd
ERP: 400 Watts
40 dbu: 24.2 Mi



Scale: 1/1,000,000
Scale: 1 in. = 15.779 Mi.

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Spectrum Management Systems, Inc.
Arlington, VA [703-528-5115]

APPENDIX C

PROPOSED RULES

PART 2 - FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS: GENERAL RULES AND REGULATIONS

1. The authority citation in Part 2 remains unchanged.

2. Section 2.106, the Table of Frequency Allocations, is amended by adding the designator "Private Land Mobile" in columns 5 and 7 for the 157 and 161-162 MHz bands, and by adding the special use frequencies listed below.

Section 2.106 Table of Frequency Allocations

United States Table		FCC Use Designators	
Government Allocation MHz	Non-Government Allocation MHz	Rule part(s)	Special-use frequencies
(4)	(5)	(6)	(7)
157.1875-157.45	157.1875-157.45		157.2125 157.3375
	MARITIME MOBILE	MARITIME (80)	157.2375 157.3625
613	613		157.2625 157.3875
US223 US266	US223 US266		157.2875 157.4125
	NG111		157.3125 157.4375
	PRIVATE LAND MOBILE		PRIVATE LAND MOBILE
161.775-162.0125	161.775-162.0125		161.8125 161.9375
	MARITIME MOBILE	DOMESTIC PUBLIC	161.8375 161.9625
		LAND MOBILE (22).	161.8625 161.9875
613	613	MARITIME (80)	161.8875 162.0125
	US266 NG6		161.0125 162.0375
	PRIVATE LAND MOBILE		PRIVATE LAND MOBILE

PART 90 - PRIVATE LAND MOBILE RADIO SERVICES

1. The authority citation in Part 90, 47 C.F.R. § 90.1, remains unchanged.

2. Subpart K of Part 90 ("Standards for Special Frequencies or Frequency Bands) is amended by adding the following new sections:

§§ 90.282-90.289 [reserved]

§ 90.290 Assignment and use of certain frequencies in the 156-162 MHz band.

(a) The following frequencies in the band 156-162 MHZ may be used for private land mobile service operations by industrial and land transportation eligibles:

156.2625	156.7125
156.2875	156.7375
156.3375	156.8875
156.6125	157.0125
156.6875	
157.2125	157.3375
157.2375	157.3625
157.2625	157.3875
157.2875	157.4125
157.3125	157.4375
161.8125	161.9375
161.8375	161.9625
161.8625	161.9875
161.8875	162.0125
161.9125	162.0375

(b) Use of these frequencies is subject to the following conditions: (i) output power shall not exceed 50-watts; (ii) land stations must be located 50 or more miles from stations in the maritime service (Part 80 of this Chapter) operating on an adjacent (12.5 kHz offset) channel.

(c) Applications for use of these frequencies are subject to the requirements of section 90.175 of this Part.